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PREY CARRIAGE ON THE STING BY *SERICOPHORUS RELUCENS* (HYMENOPTERA: SPHECIDAE: LARRINAE)

Most species of sphecid wasps use their mandibles or legs to carry their prey as they fly back to their nests (Evans, 1962; Genise, 1980). Transporting the prey on the sting is known from only a few species in the Crabroninae (Evans, 1962; Peckham et al., 1973; Genise, 1980). I report here the carriage of prey on the sting by a member of the Larrinae, *Sericophorus relucens* F. Smith.

I observed a female of *S. relucens* catch a *Musca vetustissima* Walker from a group of bushflies circling my head, at 14:08 on 11 Dec 1985, at Camp Pincham in Warrumbungles National Park, New South Wales, Australia. The wasp, grappling with the fly, landed on the ground near my feet and stung it in the ventral part of the thorax. Through binoculars I watched as she made two short (5–15 cm) flights with the fly impaled on her sting. She then flew off and I caught her in a net where the bushfly was clearly seen to be still impaled on her sting. The fly was dislodged from the sting for the first time when they were placed in a vial. A week previously I had observed another female of *S. relucens* catch a bushfly. Her actions reminded me of *Oxybelus uniglumis* (Linnaeus), a species that transports prey on its sting, prompting me to watch closely when it happened again.

Transporting prey on the sting is unusual in the Sphecidae. The primitive and most common type of prey transport is using the mandibles (Evans, 1962; Genise, 1980). Many genera use the middle legs as the principal support for their prey, while only 3 genera use the hind legs. Two of these 3 genera, *Oxybelus* and *Sericophorus,* are those which include species that transport prey on the sting (Peckham et al., 1973; Matthews and Evans, 1970). *Sericophorus* therefore, provides another example of the evolutionary trend described by Evans (1962) of the shift of prey further back for transport.

Both *S. relucens* and the several species of *Oxybelus* that carry their prey on their sting, prey upon Diptera (Peckham and Hook, 1980). Steiner (1978, 1979) has shown in *O. uniglumis* that a single sting is directed toward the one major fused ganglionic mass of the fly. He has also shown, at least in the captive situation, that the sting is

not removed after paralysis and before transport. This appears to hold for *S. relucens*. Presumably the single sting and use of small dipterous prey have been important in the evolutionary convergence of prey carriage on the sting in these two groups of wasps. Some authors include both *Sericophorus* and *Oxybelus* in the Larrinae (Evans, 1964; Lomholdt, 1985). Despite being considered in the same subfamily, they are not closely related (Lumholdt, 1985) and therefore prey transport on the sting in these two taxa is a convergence, not a result of common descent.

The fly and wasp were identified by Dr. D. Colless (Australian National Insect Collection, Canberra) and Dr. O. Lomholdt (Zoologisk Museum, Copenhagen), respectively and are preserved at their institutions. Chris Thomson and Chris Reid provided helpful advice on the manuscript.—*David B. McCorquodale, Department of Zoology, Australian National University, GPO Box 4, Canberra, ACT, 2601, Australia.*

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OBSERVATIONS ON THE SWARMING BEHAVIOR OF *EUCHELICHIR LONGIPES* JEANNEL IN NORTHERN MADAGASCAR (HETEROPTERA: ENICOCEPHALIDAE)

Aerial swarming behavior in members of the Enicocephalidae has been reported by many authors, but little information is available on the prevailing conditions that